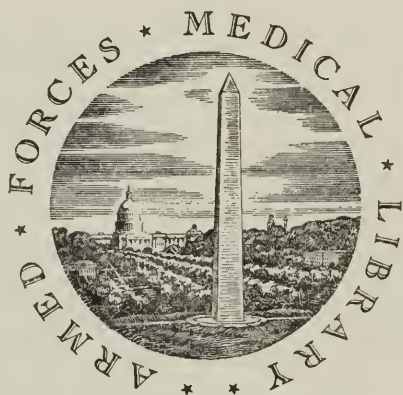


UNITED STATES OF AMERICA



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WASHINGTON, D.C.

Thornton

AN

INAUGURAL DISSERTATION,

ON THE

PROGRESSIVE STATE

OF MEDICAL SCIENCE,

AND THE

AGENCY OF THE SANATIVE ART,

IN MELIORATING

THE

CONDITION OF MANKIND.

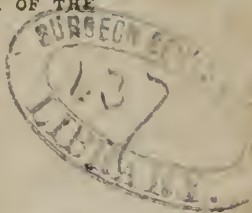
BY GEORGE A. THORNTON,
OF VIRGINIA, CHAIRMAN OF THE PHILADELPHIA MEDICAL
SOCIETY, AND HONORARY MEMBER OF THE
AMERICAN LINNAEAN.

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1807.





AN
INAUGURAL DISSERTATION,
FOR
THE DEGREE
OF
DOCTOR OF MEDICINE.
SUBMITTED TO THE EXAMINATION
OF THE
REV. JOHN ANDREWS, D. D. PROVOST,
PRO TEMPORE,
THE TRUSTEES AND MEDICAL PROFESSORS,
OF THE
UNIVERSITY OF PENNSYLVANIA,
On the tenth day of April, 1807.

TO DOCTOR'S,
HORACE BUCKNER, AND AYLETT HAWES,
OF
CULPEPPER COUNTY, VIRGINIA,
THIS DISSERTATION IS VERY RESPECTFULLY INSCRIBED BY
GEORGE A. THORNTON.

WERE it my object to select from the extensive scope of my medical acquaintance, those who have been the most assiduous, in using to the best advantage, the exalted art of meliorating the suffering condition of that part of mankind, whom penury and pain have claimed as lawful heirs ; the names of a Buckner and a Hawes, would be pre-eminently distinguished. But as genuine charity, and meritorious actions are beyond the reach of popular applause ; so let the deep and silent current of their individual merit, passing the declivity of time, meet in death the reward of their troubles.

But, Oh my friends ! Oh my preceptors ! Shall you who have perverted the arm of death....who have rescued a fond mother, a tender father, or a beloved child, from the very jaws of this insatiable monster....you who have wiped away the fast trickling tears, and planted smiles on the face of anguish and despair....efficient agents in

the grand cause of humanity....what untimely period shall mark the dreary blank in its extended sphere, and death triumph over its greatest enemies?

Monster that thou art! What sacred hand shall gild the fascinating pill? Which ingulfing? shall benumb thy pallid limbs, and amidst thy wreck of triumphs, lay thee in the tomb of eternity.

But whither do I wander! are these the sordid effusions of individual affection, and private esteem? As a friend to humanity, in the exalted sphere of philanthropy, I assert a nobler claim.

In doing as they have done, to God....to the world, and to myself, I shall stand acquitted. My best endeavors to walk in the path which they have trodden is the only recompence I can now offer, for that attention and toil, with which they have watched over my early youth, and for the unnumbered kindnesses which they have so amply showered on the last years of my life.

If in the perusal of the following pages, (which originated in necessity, and have been executed in a space too limited for the merits of so exalted a theme) one solitary idea may be added to the expanded scope of their benevolent reflections; their momentary pleasure will be to me, days of delight, their single approbation shall be the reward of all my toils.

THE AUTHOR.

TO
CASPER WISTAR, M. D.
PROFESSOR OF ANATOMY AND MIDWIFERY,
IN THE
UNIVERSITY OF PENNSYLVANIA,

SIR,

ON the eve of a crisis, which has long been anticipated with pleasing anxiety ; having effected a purpose environed by difficulties the most arduous, and which I have voluntarily assailed by an unusual rout; the termination of my labors, the attainment of my wishes should be productive of pleasure and delight: but, Sir, the pleasures of hope enveloped far more than the enjoyment of the reality ; and happiness is found to be a shadow which varies with the position of its object. From this pinnacle to which I have clambered by the reiterated exertions of the last years of my life, vanquished difficulties magnify the pleasure of beholding that part of the prospect, which has been so minutely explored under your guidance and protection. But before me lies a boundless tract, a dreary wilderness, in which no pleasing object salutes the eye of the disconsolate pilgrim ; and the moment now arrives which is to

dissever me from an intercourse and connection with a friend, a patron, and a preceptor. To the language of *silence*, I appeal for that which words cannot express. Forgive me Sir, for exhibiting to your feeling mind the rude features of this natural scene : it is but a faint draught of the original impression which all the adventitious tints of art could not portray.

Accept Sir, the humble tribute of my thanks, as the only poor requital which I can now tender for your many kindnesses. For the benefit of society, the cause of humanity, and the good of thousands yet unborn, may the hand of death long be withheld. May the muse of medical science through the smiles of your countenance, for unnumbered years delight to revisit her annual votaries ; and the rites of her sacred altar in the Western temple of medicine, long be performed by her favorite son.

WITH THE MOST AFFECTIONATE REGARD,

THE HIGHEST SENSE OF GRATITUDE

AND ESTEEM,

I HAVE THE HONOR TO BE,

YOUR VERY HUMBLE SERVANT,

GEO. A. THORNTON.

BENJAMIN SMITH BARTON, M. D.

PROFESSOR OF MATERIA MEDICA, NATURAL

HISTORY, AND BOTANY,

IN THE

UNIVERSITY OF PENNSYLVANIA.

SIR,

THE very polite attentions I have received from you, during my residence in this city, have stronger claims on my feelings than it would be proper now to express. In our private intercourse I have to thank you for the many services you have afforded me, for the well wishes your friendship may have indulged for my prosperity: but viewing you in the more public relation of preceptor, any expressions of esteem would be a very inadequate remuneration for the benefits your instruction has offered me. Born at an era, when bigoted attachment to a system, superstitious reverence for a name, had lost their influence with the disciples of truth and of science, you have rejected from the sphere of your department, whatever would impede the progress of the healing art. Nor have your toils been confined to the field

of medicine. When yet the Western Hemisphere had scarcely been illuminated by one solitary ray of science, at a period of our country, when the enticing prospects of gain, almost irresistibly dissuaded from the laborious avocations of study; you have trodden with painful and arduous steps the same ground, the researches of a Swedish and a Russian philosopher had been devoted to explore. To you will America be indebted for greatly developing her botany, for tracing the affinity of the savage inhabitants of her forests. In her future annals you will be ranked to her as a Linnæus and a Pallas. That you may long continue one of the supports of the fair fabric of medicine, reared by the liberal and indefatigable efforts of genius on this side of the Atlantic,

IS THE FERVENT WISH

OF YOUR

SINCERE FRIEND,

GEO. A. THORNTON.

INTRODUCTION.

I SHALL attempt in the following pages to illustrate the progressive improvement of medical science, by shewing its dependance on accident, and observation, for those facts, which can be the only guide to its true and rational doctrines.

A reference to circumstances which have had a direct tendency to advance general science, and thus to enlarge the scope for medical acquisition; a few of the most leading traits in the history of medicine, arranged without chronological precision, will likewise be subservient to my primary intention: and will show in what degree the present happiness and comfortable case of mankind, owes its origin to the sanative art. Lastly, should the force of previous analogies, lead me to wander in the fields of conjecture; to feast the imagination with an extended prospect of hope; indulge me my reader with a momentary forgetfulness of the beds of pain, torment, and affliction...the house of mourning and distress! let the iron age of man be lost to your recollection; we will view him not as he is, but as he should be.



ON THE
PROGRESSIVE STATE
OF
MEDICAL SCIENCE.

FEW of the discoveries that embellish the pages of philosophy, or even the more adventitious science of mathematics, were the encloistered results of mental operation. With unconscious celerity, imagination robs memory of her toilsome acquisitions ; with nice arrangement she links the solitary ideas culled from the rubbish of time, till with assimilated beauty the radiant chain is perfect in all its parts.

Unconscious of the direful effect, Bacon published to the world the fulminating result of accidental composition ; wrapped amidst volumes of smoke, in awful and tremendous roar, tiptoed imagination listens to the groans of expiring millions ; with tearless neglect views the distresses of widows and of orphans !*

Reason is not a faculty of the mind, but an operation of its faculties ; a mere arrangement of ideas. If these ideas are the result of accurate perception, their just arrangement and logical disposition, constitutes philosophical theory ; whilst on the contrary an inference from false ideas is mere hypothesis.

Physiology is the proximate cause of medical theory ; and a true system of physiology can only be derived from an accurate and intimate knowledge of the different parts of the animal body. “ Among the ancients the progress of anatomy

* The experiment of Roger Bacon on the union of Sulphur Charcoal and Nitre, being repeated by Bartholomew Schwartz in the year 1320, the materials were pounded in a mortar, carelessly covered with a stone, and put to dry ; a spark of fire accidentally fell into the mortar, and the consequences of the explosion gave rise to the invention of fire-arms.

was very slow, not only because religious prejudices would not admit of the dissection of dead bodies, but from the vulgar opinion that regarded the touch of such bodies as a sort of moral defilement." The utmost limits of the science, was some vague acquaintance with the structure of brutes ; these analogies did not lead them to determine on the most important functions of the human body : ignorant of muscular irritability, nervous influence, the action or existence of the absorbents, the theory of the circulation, mysteries enveloped in the long series of ages ; ignorant of such important facts the errors of their theories might well be expected.

" The medical system of Hippocrates was nothing more than a science of observation, which as yet had led only to empirical methods. The spirit of sect, and the love of hypothetical position soon influenced it."

Superstitious horror checked the career of medical science, or Greece would have nurtured the auspicious germe, which the chilly blasts of two thousand years matured in a more northern clime. As the visionary monsters of fancy mock the simple features of nature, so do the complex ideas of error, distort her less intricate operations : the beautiful illustration of the unity of disease, graduated by its simple scale of excitement, is perfectly consonant to the phenomena of her works. But I anticipate the dawning progress by which accident shed light upon the world.

The mouldering heaps of medical antiquity, culled from the gorgeous ruins of Roman splendour, or ingulphed in the tombs of Gothic barbarity, are unprofitable records in the pages of our art. We view with disgust the virginity of medical science prostituted by slaves, bold and adventurous empiricism, polluting her sacred altars. Let Stoics and Antiquarians scan this gloomy scene ; more luxuriant beauties spring in the hither prospect.

Accident or observation seduced the cautious adventurer, with timorous ignorance to navigate the circumscribed pool ;

bold by experience, he launches the fragile bark, and with heedless care trusts the rapid current. Accident, a fruitful source of science, revealed by degrees the use of the sail, the power of the helm, of the magnetic needle ; these became subservient to the general purposes of acquisition : avarice furlled the sails of commerce in remoter climes, or the wing of science caught the gentle zephyr, and transported to a happier world the soul of Columbus. Father of Liberty ! in a tomb of bigotry thy memory lies, a gloomy monument of the ignorance and ingratitude of a recent age.

New discoveries gave rise to new conjectures, and experiment began now to be the test of truth ; till at length the wearied prow furrowed the tractless paths of ocean's immeasurable space, and verified the suggestions of reason.

Emboldened by these facts, the genius of Newton ceased to slumber in the circumscribed regions of earth ; it soared into the vast immensity of space, gave to the sun brighter splendor, and magnified the glittering baubles of the skies, the longlived ornaments in the canopy of ignorance, into stupendous systems in an infinite universe. Exalted man ! purest emblem of thy Maker ! thy omniscient soul deserted its terrestrial pilgrimage, in mortal form pervaded the mansions of immortality : death grew jealous of thy prophetic zeal, shrouded in the dazzling rays of light, niched in the stellated canopy of immortality thy memory stands !

Were we to expect that the genius of Newton, which at a period like this was deemed incomprehensible ; but which is now analyzed by every school-boy, should fix the limits of aerial computation ? this would contradict the tenets I maintain, and the facts I adduce to maintain them. His abstruse and logical theory of optics which he consummated by abstract reasoning, and mechanical demonstration ; at the present advanced period of anatomical research, is found so exactly to coincide with the structure, and visual function of

the eye; that the self-taught anatomist, would *a-posteriori* establish the same conclusions, and call Newton a plagiarist.

If his more curious eye led him to admire the vast expanse, adorned with the beautiful covenant which is never intruded but at a period recalling the memorable era of its primary existence*....If his philosophic mind taught him to unravel mysterious effects, in the simple ray of light, to seek the brilliant tints that ornament the heavenly arch; to view the works of the Creator as linked in an unbounded chain of events....If the broader basis of his rational piety, breaking the manacles of superstition, the chains of fanaticism, demonstrated to the weaker capacities of the age, the uniformity and simplicity of nature's works: were these to be the limits of our knowledge, was the progress of science and discovery to be bounded by the era of his mortality? his glorious career was but to interpret a luminous page in the vast folio of nature.

If in remoter periods Prometheus suffered excruciating pangs, and entailed evil on his posterity by his depredations on the heavens!† The immortal and undaunted Franklin, risked martyrdom to tame the furious and unruly element, led the captive foe from its ethereal tenement, and bequeathed on mankind a peaceable possession of his humble mansion.

Were I to name a few, I should do injustice to many, who have toiled with arduous and honourable zeal in the great laboratory of nature: without presuming to invent new agents, or to extinguish an atom of the Creator's works; have unravelled the mysteries of abstruse operations; have taught mankind to smile at the miracles of idolatry; that the order of the universe, with all its minutiae, is adjusted with such wisdom, is arranged with such admirable nicety, that the light

* Rain seldom or never falls in Egypt: previous to the deluge this might have been the case in the adjacent country of Asia Minor, where the first appearance of the rainbow is recorded as a miracle.

† It is supposed that Prometheus may have been the inventor of distillation; and that the vulture feeding on his liver, was an allusion of the ancients, to the well known affection incident to the use of ardent spirits.

which burst into existence as the great Creator spoke, in the endless ages of eternity, shall know but to obey his single mandate.

The labours of the Chemists for a century past, have shed light on every branch of science and the arts, and have ornamented the medical cabinet with some of its brightest gems.

To them, “ we are indebted for a knowledge of that kind of combustion of atmospheric air which is effected in the lungs ; of the oxygenation of the blood, of the origin of animal heat, and of interesting conjectures, supported by experimental observations concerning the causes and characters of malignant fevers, and of their inflammatory or anomalous symptoms. To these great acquisitions we must add, the analysis of animal solids and fluids, the component parts of which, have been admirably enumerated, and likewise some mysteries of their growth, distribution and final dissolution. Of course, new pathological views have been judiciously offered, respecting certain visible and invisible agents which cause perturbation of animal life ; among them, deleterious gases, by their operation on animal irritability, stimulant, sedative or poisonous, have really revealed a long series of our diseases.” To the operations of Chemistry, we are indebted for some of the most active articles in the annals of the *materia medica*. However laudable were the inducements of the earlier votaries of this science,* in ransacking the bowels of the earth, distorting into every shape the animal, vegetable and mineral kingdom ; posterity may smile at their follies, whilst they enjoy the fruits of their toil ; accident, cupidity, avarice or similar causes, form invariably the bases of the most important discoveries, and are the touchstones that attract the human mind, from its grovelling sphere.

Whilst they enraptured sought through the mazes of creation, for the golden talisman, or the elixir of immortality ;

* The alchymists.

lured by the hidden phantom, in the extacies of expectation, they enjoyed more than the short lived happiness of reality ; and the volume of their disappointments, is the richest legacy that was ever bequeathed on posterity. In bidding adieu to these venerable patrons of science, fain would I stray with you, my gentle reader, to the tomb of Lavoisier, pluck the rank weeds of tyranny that sprout in human gore ! or drop a tear of pity on the grave of Priestley ! Fain would I engage my feeble pen to eulogise their worth ; but lest I dishonour the noble theme, let some abler hand inscribe on adamantine rocks, an immortal elegy.

Pleased, I approximate the verdant fields, where roseate health blooms in perennial charms ; in this great kingdom of the creation, (confounded like the children of Noah), and scattered through the vast regions of the earth, from where Adansonia with its immeasurable branches, hides the genial soil from the torrid heats ; to where the humbler Lichen yields a scant repast to the faithful Roe ; Linnæus toiled to restore harmony to the vegetable tribes. Where huge cliffs hang tremendous o'er the foaming deep, and mock with proud heads the crash of angry elements, didst thou seek in vain thy wandering subjects ? Or did the dark unfathomed caves of the ocean, hide from thy penetrating eye the cunning spouse of Valisneria ?

Though the virtues of the poppy, and other active articles of the *Materia Medica*, had been investigated at an earlier period ; the progress of navigation, the spirit of enterprise in settling and exploring the desolate wilds of vast and trackless forests, where the keen eye of even the prowling savage, had not polluted the virgin growth, yielded tributary stores, to the accumulated heaps of antidotes and alexipharmics. Amidst the dreary recesses of a wild and desolate region, where the disconsolate exile, viewed the terrific countenance of its native savage, with little less horror than the grim monster, fierce under the scorching rays of a torrid sun....as pale and emaciated he sought from the nearest lake to quench

the febrile heats, that alternately parched the frigorific blood ; as he imbibed the salutary draught, new life thrilled through his renovated form... in admiration he found the bountiful source of his blessing to be the stately tree, which accident or chance had precipitated into the pool, from whence necessity urged the medicated potion. More acceptable to mankind than the gold of its native soil, the spreading canvass bore to European climes the joyful mediator ; snatched from oblivion the luckless Jesuit, and immortalized his name in the annals of medicine*. A subordinate tribe of pestilential fevers crouched before the proud usurper ; or was this the limits of its empire....with confidential steadiness it antagonizes (under various combinations) one half of the scale of excitement, or proteiform malady in its most terrific shape.

Ere this mercury had usurped a prerogative over the children of Venus : and its salutary action on the system, began to assume extensive dominion.

Plague which had long stalked majestically over the regions of the earth, vanished like tyranny and oppression, shunning the refulgent and dazzling rays of wisdom, sought in the regions of Mahomet, amidst the voluptuous seraglios of Sultans the sequestered retreats of ignorance and oppression.

The vast acquisition to the healing art, from some new and important discoveries in the animal æconomy ; the circulation and oxygenation of the blood, the theory of absorption, the origin of animal heat, consequently effected important changes in Physiology, and the knowledge of diseases. Humoral Pathology, the famous palladium of the day, neglected lives but to commemorate the ignorance of its patrons.

* Although many circumstances respecting the original discovery of the Peruvian Bark, are yet in obscurity ; it is admitted that the Jesuits were active in disseminating its use, and removing those prejudices which even the Physicians of that early period, strenuously maintained against it. Their exertions derived additional support, from the memorable experiment made on the Countess of Cinchon, in the year 1640

At an eventful period the genius of Cullen explored the regions of Pathology, and gave to posterity a history of diseases, which shall elude the ravages of time. Had his noble mind, fully adequate to the task, have glanced at the propriety of arranging in more extended bands his grim and well disciplined tribes of disease; to him would have redounded the honour of marshalling the sthenic and asthenic enemies of mankind; dismissing the aid of the *vis medicatrix naturæ*, and proving that life was a forced state. But as the limits of science are incomprehensible and unattainable, knowledge may for ever be progressive: pile on pile may heave its towering summits, and the noisy current of each individual stream, mingling at length with eddying silence, is lost for ever in the ocean of science.

The puffed up sycophant, big with the concentrated wisdom of preceding ages, laughs at the toil of arduous Philosophers, who consecrated their lives to feast him for an hour; he links the chain of wisdom, frowns on the features of innovation, or garbs himself in borrowed plumes; a literary monster....The astonished world gaze on his heterogenous form, and forgets that he pastures on the labours of others. But if from credulity, mankind have erred in falsely appreciating the merits of individuals; the general cause of science has suffered more materially from their illiberal and erroneous prejudices.

There was a time when Tyrants had the power of proscribing and expunging from the annals of literature, truths disagreeable to their prejudices, or inimical to their views: science labored in vain, all her avenues were locked, priestcraft and despotism tyrannised over ignorance and wretchedness: the muses were incarcerated in oracles and monasteries, mad priestesses and monks their traditionary biographers. Manuscript was a poor vehicle to disseminate the verging rays of science, that gleamed from every point: the art of printing,

and the liberty of the press, are inscribed in golden letters, high on the majestic front of wisdom's temple.

What might have been the fate of the Brunonian doctrine, under the above circumstances ; generated in the very bosom of rancorous oppression, so feebly nurtured by its unfortunate patron, is easy to be conjectured ! But the auspicious germe which feebly flourished, and but here and there put forth luxuriant shoots in its native clime ; transplanted to the soil of America, nurtured with fostering care, deprived of redundancies, and supplied with additional fulcra, spreads its majestic branches, and rears its towering verdure to the skies.

In this city where science has transferred her palladium to the sages of the medical world, I am happy to have it in my power to adduce facts alive, and long to live in the memory of its inhabitants, of the progressive dominion of the healing art. To say nothing of those monumental domes of benevolence, where the agonising groans of misery are lulled into quiet repose by the soothing aid of philanthropy ; where annual hundreds are relieved from loathsome maladies and acute disorders ; beckoned from the outstretched arms of poverty and distress, and claimed as unlawful victims to the king of terrors....besides, the correlative aid of the experienced accoucheur in alleviating the pangs, snatching from premature dissolution the sinking mother, or ushering into new existence the child of hope !....besides the important achievements of the skilful Surgeon, in meliorating the conditions of those numerous victims to casualty and crippling disorder ; what shall I say ? will the limited precincts of my present intention, permit me to name a train of disorders, which once harrassed the unhappy sufferer, till welcome death relieved him of his afflictions. However, I may succeed in demonstrating the fact, it is a solemn truth, that medicine has barred more than half the outlets of human ex-

istence ; but lamentable to be said ! her benign influence is at this day concentrated, even in this civilized world. As veteran generals in this metropolis, where the fiend of dissolution summons his legion of invincibles, dauntless skill stands before the scythe of death, and prostrates his sable banners. But lamentable gloomy prospect ! look upon the out-skirts ; see the base centinels connive at his ravages, or aid him in his devastations ; no law to restrain these unmerciful brokers of death from grinding the face of penury ; and under the hypocritic garb of science, issuing their warrants of destruction ; base imposition ! shameful policy ! but the day will come, perhaps the joyful period is not far distant, when the wretched “ Leper may no longer wait for the troubling of the waters.”

For the present let this metropolis be the theatre of my comments ; challenge the truth of this scenery as it passes before you. Inflammation with its causes and concomitant symptoms, constituting the various acute forms of disease incident to the climate, scarce attracts the attention of the Physician ; whilst dropsy under its various forms, with its direful train of symptomatics, no longer mocks his skill ; or does consumption remain the opprobrium of medicine.

It would encroach upon the limits of your patience, my thesis would swell into a volume, were I to write a history of its triumphs. In the distant retrospect we have exhibited Plague dwindled from a giant to a pigmy, and Syphilis neutralized by its antidote.

Another giant groans under the mountains of Jupiter ! The small-pox, from its contagious nature and universal dissemination, over every part of the known world, was long the mortal scourge of man ; besides sweeping its annual millions into the gulph of eternity, left a majority of its surviving sufferers, odious to themselves, to bear the carnal marks of its inflictive force : but a merciful God has not burthened

his creatures with more evils than antidotes ; accident at length protrudes the joyful embryo from the womb of nature* ; this enemy to mankind, which outstripped the ravages of time, will soon exist but in the musty folios of antiquity, and serve but to amuse the inquisitive virtuoso.

Gentle reader, did the genial sympathy of your mind, vibrate with the enthusiasm of my pen, here might we rove through the verdant fields of fancy, and weave garlands for the Esculapian muse. But to end the catastrophe, let me intrude on your patience one more gloomy retrospect. Whilst mouldering piles number the long generation of our ancestors, and relentless time holds in solemn silence their peaceful reliques ; let us meditate, for a moment, among these recent tombs that crowd the luckless plain of Philadelphia :.....awful monuments of the inexperience of Physicians, in checking the first incursions of a cruel ravager ! It would be foreign to my intention to risk opinions, respecting either the exciting cause, or the treatment of the yellow-fever ; or to say any thing, that was not palpably notorious, to the most inattentive observer. Epidemics of a similar nature, had at long and irregular intervals, been precursors of the fatal malady of ninety-three ; but viewed as casualties, their transitory existence excited but momentary alarm : soon as the foreign foe was supposed to have been alienated, the apprehensions of the inhabitants were lulled into repose : the Physicians flattering themselves, that they might never more be enlisted in a similar encounter, and not willing to be the recorders of such tragical events, committed to the oblivion of time, or to the uncertainty of tradition, fragments so interesting to posterity.

But whether in dormant disposition, the lurking fiend (enveloped in miasmatic disguise) sought the favourable opportunity ; or a foreign spark kindled the flame of ninety-three, may still be a question : true it is that the exertions of all

* Vaccination was discovered to counteract variolous contagion in the year 1798 by Doctor Jenner.

parties were united, to quell the conflagration ; lamentable to say, their efforts were for a long time unavailing ! Day after day, swelled the catalogues of death, and in the short space of three months, five thousand human beings were victims to the grave. It is too late in the midst of carnage to consult oracles, or to oppose experiment and conjecture, to the rapid tide of desolation : to save every fourth case was more the result of fortuitous accident, or the salutary efforts of nature than the timorous aid of the impotent practitioner. But at length (through what means let history reveal,) a considerable innovation in the mode of practice, subjected this fatal disease to the powers of medicine. From a comparative statement of its mortality in later years, instead of a fourth, by far the greater number are found to survive the attack ; and not from natural causes, but from the dear-bought skill of the physician. The strong features of observation leave more lasting impressions than eloquence or argument, and supersede my feeble comments. Upon this single fact I could safely rest a decision of the two principal points, designed to be established by the relation of the preceding pages, viz :

1st, that we have no knowledge without fact, or in other words, that medical skill is acquired by observation and experience.

2dly, That there is no disease in the living world that necessarily eludes the powers of medicine.

It is the sublimest saying of an illustrious author,* “ that old age should be the only outlet of human existence.” But this is the point, here the mystery lies...what is old age ? that which was from the commencement of time, what it is now, may rationally be looked for till the end of time : but all the opinions of mankind are not built upon such forcible analogy ; or are they aware how frequently they violate the most established laws of reason ; adopt moral impossibility as genuine truth, whilst at the same time, they take up arms to banish reality, or to maintain the maxims of the nursery.

* Dr. Rush

Avarice induced mankind to exert their skill, or arrogate the power, of amending the breed of their domestic animals, rendering them more prolific, increasing their size, strength, activity and longevity. But they are deaf to the persuasions of reason and analogy, to use similar exertions, in amending their own deformities and imperfections. Such systematic procedure would derogate from the doctrines of divinity, or supercede the maxims of their ancestors. In the present state of medicine I can venture to assert, and the fact might be established by calculation, that nine-tenths of mankind fall victims to unnatural death; that is, to death from diseases which are positively curable: thus, indeed, a very few have a chance to exhibit on the stage of mortality in the last scene of life, or to enter the solemn tomb, with hoary honors.

Although the remote causes of most diseases are familiar in the schools of medicine, their prevention practicable, and cure certain: the theory is the subject of admiration, whilst we view with regret, the general indifference of mankind, regarding either a mortal, or immortal salvation. Thus some are wheedled into eternity from a fallacious reliance on the restorative powers of nature; some from habit or idiosyncrasy, have an antipathy to medicine, and a singular dislike to physicians; whilst the majority of mankind, are influenced by religious scruples, and strenuously oppose all adventitious means of support.*

The doctrine of free agency as an attribute of man, from a specious appearance of counteracting the omniscience of the

* In justification of this assertion, I must beg the reader to recollect the many instances, wherein the inhabitants of whole countries resigned peaceably to mortal epidemics, supposing them to be derived from heaven, and that the vengeance of the Deity could only be appeased by prayers.

Others, wherein the sufferers were left to the course of nature, it being supposed that the events of this life were unalterably fixed; for such reasons, variolous inoculation, not many years ago, met with formidable opposition in the most enlightened parts of the world. And it is much to be lamented, that at this period mankind are so dilatory, nay indeed a part of them so obstinately opposed to vaccination; which by being universally and periodically resorted to, would soon banish from the world a disease, which in the space of the last century destroyed forty millions of the human species

Deity, has long been a plausible objection to human intervention. The validity of such opinions would be fatal to all exertions, would cut the very sinews of religion and science, and place the savage and the civilized man on a perfect equality.

The will and agency of man are supreme over his own faculties, organs, and life itself, this common observation will sufficiently justify.

In the beautiful allegory of Adam, the fate of mankind is concentrated in a single object; and the era is memorable, when sin introduced the first predisposition to death. Revelation informs us, that Adam in a literal sense (or in a more liberal signification) man was created with capacities susceptible of immortal existence: and the same revelation induces us to believe, that as sin multiplied, the seeds of death were disseminated. We read and lament the deplorable depravity of man, verging from a state of terrestrial exaltation to a dreary scene of ignorance, wickedness and death. There is the most intimate union between the motives of sin and the causes of disease: every lesson of morality would supercede the precepts of medicine, in banishing the remote causes of death; and the aid of medicine in meliorating the condition of mankind, eradicating the seeds of disease, and banishing death from the world, strongly co-operates in the measures of religion.

The speculations of physiology on the demonstrated mechanism of man, detects no mechanical impediments in his structure; parts so admirably adapted to support the whole, that the capacity for life, would exist for ever, if the actions from external causes were in a due degree. 'Tis presumption, 'tis impeaching the wisdom, the merciful justice of a Creator! to say that the work of his hands ...man, the idol of himself, is essentially, or intentionally doomed, to toil through the gloomy vale of threescore years, goaded by the cruel hand of affliction and diseasea carnal mass of imperfection, to end his dreary and short-lived career, in the chilly arms of death. The tenets

of the predestinarian, supposing the span and plenitude of life, limited to each individual from the commencement of time, bears a rational comparison with the contracted ideas of the mass of mankind, as to the inclusive limitation of the species in general, to a numerical period of longevity. The superstition of one proscribes all adventitious means, as sacrilegious warfare with the decrees of heaven; the other is awed into silence by the established maxims of custom, with serenity, and meek resignation, stands on the eve of eternity, sees the rolling billows of time ingulph succeeding ages, without a struggle, or bold endeavours to stem the torrent. Reason should restrict the voluntary power we possess, the exuberances of fancy, should be cancelled by judgment. The presumptuous idolater who moulds inanimate matter into animal form; and essays to breathe life into its nostrils, rebels against the laws of his Maker, flagrantly abuses the dictates of reason, his own capacities and the opinions of mankind. But if I have the power, and do actually endow this little sparrow, with double the period of its usual longevity;* if I imbrue this humble *annual* plant with *perennial* existence† and a larger growth; if I give brighter charms and length of days to this drooping, and perishable flowret,‡ the prejudices of mankind do not rebuke. The principles of vitality from nobler man to the meanest vegetable, are linked in an indissoluble chain of analogy, life is no more a prerogative of the potentate than of the truffle; the same sun dispenses his benignant rays to both; by their appropriate stimulus, each is warmed into existence, or by a similar abstraction either sinks into dissolution.

The clearest demonstration, the most rational arguments of an illustrious author,|| prove life to be the same in all

* The sparrow in its natural state lives ten years, but if kept from promiscuous intercourse with its female, its life is protracted to double that period.

† By green house cultivation, or change of climate.

‡ Flowers which by peculiar culture lose their sexual organs, have an additional number of petals, and are said to be double; in which state they are not only more beautiful, but remain in bloom much longer.

|| Doctor Rush

organized bodies, only differing in degree: in all, it is in a state completely subject to the operation of external causes; by the absolute power which we possess of modifying these causes, life may be diminished, increased, curtailed, or protracted. A thousand analogies might be adduced to this effect; the history of man himself, even in modern periods, offers undeniable proof in confirmation of the opinion. The century columns of chronological charts are by no means vacant, nor are such charts destitute of the records of life, protracted far beyond the limits of a century. Let the venerable ages of Parr, and Jenkins, be esteemed preternatural, even as sporadic cases they strongly predict causes that may in time, influence the whole family of mankind, and ultimately become general.

Were it consistent with the limited precincts of my present purpose, proofs might easily be multiplied: on the most solid basis of analogy, we might erect the towers of conjecture, extend the boundless prospects of hope, and anticipate the sure felicities of futurity. Language but ill accords with the nobler sympathy of the soul, on so exalted a theme; my feeble efforts have obscurely portrayed the features of truth....I appeal to an abler hand for the final tint, and in the words of a celebrated author,* subjoin the following summary of the preceding pages.

“ The organic perfectibility or deterioration of the classes
 “ of the vegetable, or species of the animal kingdom,
 “ may be regarded as one of the general laws of nature.
 “ This law extends itself to the human race; and it can-
 “ not be doubted that the progress of the sanative art,
 “ that the use of more wholesome food, and more com-
 “ fortable habitations, that a mode of life that shall deve-
 “ lope the physical powers by exercise, without at the
 “ same time impairing them by excess; in fine that the
 “ destruction of the two most active causes of deteriora-
 “ tion penury and wretchedness on one hand, and enor-
 “ mous wealth on the other, must necessarily tend to pro-
 “ long the common duration of man’s existence, and secure

* Condorcet.

“ him a more constant health, and a more robust consti-
 “ tution. It is manifest that the, improvement of the
 “ practice of medicine become more efficacious, in con-
 “ sequence of the progress of reason and social order, must
 “ in the end put a period to transmissible or contagious
 “ disorders, as well as to those general maladies resulting
 “ from climate, aliment, and the nature of certain occu-
 “ pations. Nor would it be difficult to prove, that this
 “ hope might be extended to almost every other malady, of
 “ which it is probable we shall hereafter discover the
 “ most remote cause. Would it even be absurd to sup-
 “ pose this quality of melioration in the human species, as
 “ susceptible of an indefinite advancement; to suppose
 “ that a period must one day arrive when death will be
 “ nothing more than the effect, either of extraordinary ac-
 “ cident, or the slow and gradual decay of the vital powers;
 “ and that the duration of the middle space, of the in-
 “ terval between the birth of man and his decay, will itself
 “ have no assignable limit :

“ Certainly man will not become immortal; but may
 “ not the distance between the moment in which he
 “ draws the first breath, and the common term when
 “ in the course of nature he finds it impossible any
 “ longer to exist, be necessarily protracted? We are
 “ bound to believe that the mean duration of human life
 “ will for ever increase unless its increase be prevented by
 “ physical revolutions of the system: but we cannot tell
 “ what is the bound which the duration of human life can
 “ never exceed; we cannot even tell, whether there be any
 “ circumstances in the laws of nature, which have deter-
 “ mined, and laid down its limit. But may not our physi-
 “ cal faculties, the force, the sagacity, the acuteness of the
 “ senses, be numbered among the qualities, the individual
 “ improvement of which it will be practicable to transmit.
 “ An attention to the different breeds of domestic ani-
 “ mals, must lead us to adopt the affirmative of this ques-
 “ tion, and a direct observation of the human species it-
 “ self, will be found to strengthen the opinion.

“ Lastly, may we not include in the same circle the in-
 “ tellectual and moral faculties? may not our parents who
 “ transmit to us the advantages or defects of their con-
 “ formation, and from whom we receive our features and
 “ shape, as well as our propensities to certain physical af-
 “ fections, transmit to us also, that part of organization
 “ upon which intellect, strength of understanding, energy
 “ of soul, or moral sensibility depend? Is it not proba-
 “ ble that education, by improving these qualities, will at
 “ the same time have an influence upon, will modify and
 “ improve this organization itself? Analogy, an investi-
 “ gation of the human faculties, and even some facts,
 “ appear to authorize these conjectures, and thereby to
 “ enlarge the boundary of our hopes.”

FINIS.

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